

Claims

1. An optical communications apparatus, comprising:
 - (a) an optical integrated device comprising an input, one or more integrated optical component(s) and an output, arranged such that light received by the input is propagated by the optical component(s) and exits the device as an output light beam;
 - (b) a light beam diverter arranged to divert a sample portion only of the power of the output light beam;
 - (c) a light detector arranged to detect the sample portion of the output light beam; and
 - (d) a polariser located between the light beam diverter and the light detector and/or between the output of the optical integrated device and the light beam diverter, the polariser being arranged such that if light of a predetermined polarisation is received by the optical integrated device, the polariser propagates light of that polarisation only, thereby substantially to prevent light other than that of the predetermined polarisation being detected by the light detector.
2. An apparatus according to claim 1, further comprising a light source that generates light of the predetermined polarisation.
3. An optical communications apparatus, comprising:
 - (a) a light source arranged to generate light of a predetermined polarisation;
 - (b) an optical integrated device comprising an input, one or more integrated optical component(s) and an output, arranged such that the light generated by the light source is received by the input, is propagated by the optical component(s) and exits the device as an output light beam;

- (c) a light beam diverter arranged to deliver a sample portion only of the power of the output light beam;
 - (d) a light detector arranged to detect the sample portion of the output light beam; and
 - (e) a polariser located between the light beam diverter and the light detector and/or between the output of the optical integrated device and the light beam diverter, the polariser being arranged to propagate the light of the predetermined polarisation only, thereby substantially to prevent light other than that of the predetermined polarisation being detected by the light detector.
4. An apparatus according to claim 2 or claim 3, in which the light source comprises a laser, preferably a diode laser.
 5. An apparatus according to any one of claims 2 to 4, in which the light source comprises an integrated optical component of the optical integrated device.
 6. An apparatus according to any preceding claim, comprising an optical signal transmitter.
 7. An apparatus according to any preceding claim, in which the optical integrated device comprises a semiconductor device.
 8. An apparatus according to any preceding claim, in which at least one said integrated optical component comprises a modulator.
 9. An apparatus according to claim 8, in which the modulator applies a modulation to the light received by the input of the optical integrated device.

10. An apparatus according to any preceding claim, in which the light beam diverter comprises a beam splitter.
11. An apparatus according to any preceding claim, in which the sample portion of the output light beam comprises no more than 10% of the optical power of the output light beam.
12. An apparatus according to any preceding claim, in which the light detector comprises a photodiode.
13. An apparatus according to any preceding claim, in which the light detector comprises at least part of an optical power monitor that monitors the optical power output of the apparatus.
14. An apparatus according to claim 2 or claim 3, or any claim dependent thereon, including control means arranged to control the light output of the apparatus in response to the light detected by the light detector.
15. An apparatus according to claim 14 when dependent upon claim 13, in which the optical power monitor and the control means together monitor and control the optical power output of the apparatus.
16. An apparatus according to any preceding claim, in which the predetermined polarisation of the light comprises a predetermined plane polarisation.
17. An apparatus according to claim 16, in which the predetermined polarisation comprises horizontally plane polarised light, i.e. TE polarised light.

18. An apparatus according to any preceding claim, in which the polariser comprises a plane polariser.
19. An apparatus according to any preceding claim, including a lens located between the beam diverter and the light detector, to direct substantially all of the sample portion of the light beam, such that it is detected by the light detector.
20. An apparatus according to any preceding claim, further comprising an additional polariser arranged in the path of that part of the output light beam not diverted by the light beam diverter, the polariser being arranged to propagate light of the predetermined polarisation only, thereby substantially to prevent light other than that of the predetermined polarisation being transmitted by the apparatus.
21. An apparatus according to any preceding claim, further comprising a source of electrical current arranged to apply a generally constant electrical signal to counteract any generally constant background optical noise detected by the light detector.